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SUGARMAN & ASSOCIATES

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RECEIVED

MAR 31 1993

EPA, REGION III
OFFICE OF REGIONAL ADMINISTRATOR

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OF COUNSEL

ROBERT R. ELLIOTT*

CHARLENE M. BUTLER
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GREGORY D. PALKON

LEGAL ASSISTANTS

*NOT ADMITTED IN PENNSYLVANIA

March 26, 1993

Mr. Stanley Laskowski
Acting Regional Administrator
Region III - EPA
841 Chestnut Building
Philadelphia, PA 19107

Re: C&D Site, Freeland, Pennsylvania

Dear Mr. Laskowski:

This will thank you for your letter of March 17, 1993. We have also received a copy of your letter to Congressman Paul Kanjorski dated January 5, 1993. This will respond for Foster Township.

In your letter to Congressman Kanjorski, you defend EPA's position with respect to the leach pit by reference to the Record of Decision. In your letter to me, you state that EPA still has no reason to believe that ground water was contaminated by site activities, even after reviewing the results of the leach pit sampling.

Since it has been confirmed to us that Mr. Michael Towle was transferred out of the project in late January 1993, can you tell us who is the hydrogeologist who wrote that portion of your March 17, 1993 letter relating to ground water?

As to the letter to Congressman Kanjorski, since the Record of Decision did not include consideration of pollution of the ground water via the leach pit, the reference therein to the Congressman was obviously defective. Also, you do not have our data, although we have repeatedly proposed a document exchange.

Neither of your letters reflects the determination by ATSDR that ground water is contaminated, and that particularly high levels were noted at and around the leach pit.

We had previously suggested to Mr. Erickson that it would be appropriate to have an independent review e.g., by EPA's consultant

AR504669

SUGARMAN & ASSOCIATES

Mr. Stanley Laskowski
Page 2
March 26, 1993

NUS Corporation of the ground water contamination issue. You may be aware that NUS Corporation found ground water to have been contaminated at a site which processed similar material, the MW Site in Valley Township, Columbia County. AT&T is in the South Carolina Supreme Court attempting to prevent disclosure of a 1990 study at Gaston, South Carolina. The NL site in Granite City, Illinois RI found extensive contamination.

EPA has still not established, nor investigated either the nature of the material sent to the site nor the processes at the site, to establish whether site processes generated arsenic and selenium waste which were disposed into the leach pit along with the lead.

None of the following facts appear in the RI or ROD.

In fact, arsenic and selenium were sent to the site, volatilized in the furnace, separated in the wash down, and dispersed all over the site. Two workers testified under oath that they burned arsenic lead at the site. AT&T has scrap metal classifications showing that selenium rectifiers are included in central office scrap, which was burned at the site. Arsenic was known to be used as an additive in PVC cable, which was used by AT&T.

Accordingly, arsenic was found in three DER samples in the sediment pond in the hundreds and thousands of parts per million. Thereafter, before testing, AT&T reworked the channel, burying the sediment. Arsenic and selenium were found in elevated amounts downwind of the site; these findings were characterized as background in the RI. Arsenic and selenium contamination of residential wells was occasionally observed in the testing. However, the analysis was inappropriate to observe these substances, since there was no attempt to maintain the samples in a cool condition. Recent sampling by Princeton Professor Andrew Bocarsly found arsenic and selenium at 100 parts per million in the residential well water, based on maintaining the samples in a cool condition.

The citizens still have elevated arsenic and selenium levels in their bodies. As you may know, Dr. Elaine Panitz, M.D., a Harvard trained medical doctor specializing in environmental and occupational health, and world famous toxicologist Dr. Frederic Reiders, have agreed that the residents around the site are

AR504670

SUGARMAN & ASSOCIATES

Mr. Stanley Laskowski
Page 3
March 26, 1993

suffering from arsenic and selenium poisoning, with major permanent health damage, as a result of the site activities.

In November 1987, NUS Corporation informed EPA that the draft work plan was completely inadequate to determine ground water pollution and also that site workers should be interviewed. EPA told NUS to rewrite its draft, because the consent decree was a special case. It has continued to be a special case. We enclose a copy of Bruce Smith's June 30, 1989 memo stating the inadequacies of the RI in complete detail at that time. Nothing has changed, except that Mike Towle became the project manager. While EPA has ruled that he does not have a conflict of interest arising from his father and grandfather being employed by AT&T, nor by stockholdings, given all of the above, and the fact that no one other than EPA is saying there is no evidence of ground water contamination.

In regard to AT&T misrepresenting data. You may be aware that AT&T deleted the leach pit from all documentation; you may be aware that it was not a "storm water drainage system" as someone wrote for you in your letter to Congressman Kanjorski: it was a process waste water disposal system. You may not be aware that AT&T withheld knowledge and plans of the leach pit from the public, and we believe from EPA, until we discovered it in March 1991. But are you aware that when AT&T purported to send you all of the documents it had produced to me in the Summer of 1991, it did not tell you the truth? It deleted the whole book of material specifications, which it produced to me at the same time, as part of the same Bell Labs production. Because the material was released to me under confidentiality, I cannot provide it to EPA, but I have inspected all the documents produced to you by AT&T at that time, and there were no material specifications, let alone a whole book full. (These material specifications did not include the specifications for arsenic, selenium, selenium rectifiers, or arsenical lead).

Now that EPA has conceded that AT&T mischaracterized the June 1992 data, characterizing unusable data as non detects, I suggest that EPA should review the RI where multiple examples of the same tactic occur. This is particularly significant for selenium and arsenic, which are the main substances of concern, and were unusable because of inadequate recovery. As Professor Bocarsly found, heating the samples is the culprit, or at least a culprit. This information was confirmed by laboratory specialist Deana Crumblin and by Dr. Frederic Reiders, a world class toxicologist

AR504671

SUGARMAN & ASSOCIATES

Mr. Stanley Laskowski
Page 4
March 26, 1993

and laboratory director. Their reports are also enclosed.

In short, at every step of the chain of investigation, AT&T misrepresented, frustrated, and denied access to the relevant information, and it is time that the Agency exposes the truth. We urge you to get on top of this problem, and not allow yourself to be caught in it. Mr. Laskowski, we appeal to you with the full knowledge that Administrator Browner has declared that it is going to be a new day in EPA. This case is a scandal waiting to break, and we appeal to you to make a thorough review.

EPA's conscience should not allow it to sanction the continuation of this exposure through the cover up of the facts.

Thank you for your anticipated cooperation. The opportunity to meet with you to present data and conclusions, together with an independent expert on EPA's behalf, is respectfully requested.

Sincerely,



Robert J. Sugarman
Special Counsel for
Foster Township

RJS:er
Enclosure
er-rhr93\lsk324.ltr

AR504672

JAN 30 1990

SUBJECT: Results of Public Meeting for C&D Recycling
FROM: Bruce P. Smith, Chief *B. Smith*
Hazardous Waste Enforcement Branch (3HW10)
TO: Gregg Crystall, Chief
PA CERCLA Remedial Enforcement Section (3HW12) *2-26*
DBJ

I put together the following action items as a result of the July 27, 1989 public meeting on C & D recycling.

1. 55 questions - several people expressed their dissatisfaction with our response to their list of 55 questions. I asked them to mark the questions that they got satisfactory responses on and I would ensure that adequate responses were given on the remaining questions. I recommend that after you respond to these remaining questions you meet with Jane and Sharon to make sure they are satisfied.

2. ~~Jane informed me that at a previous meeting with DER, they were informed that there were high arsenic levels in the pond. Later DER changed its mind and stated that the arsenic levels were low. This is the first time I even heard about arsenic as a potential problem. Bill McDonald of DER is the one they spoke to. You need to follow up on this. Prepare a telecon based on your conversation with DER and send a copy to Jane.~~

3. Carol Lenahan who lives about 2 miles from the site had her water tested at the pressure tank and significant levels of Cd and lead were discovered. Roy Smith has the results. She attributed the lead problem to the plumbing but recommended that other residents on her block be advised of potential Cd problems in their drinking water - I agree, but see my recommendation in response to issue 4.

4. I am concerned with conflicting information on lead and Cd levels in the drinking water at the pressure tanks of several residences. Significant levels of these pollutants appear in one sampling run for some residences and then disappear in a subsequent run. There seems to be confusion on our part and disagreement with some residents about whether these significant levels are at the tap (a potential plumbing problem) or at the pressure tank. Also, there is uncertainty whether EPA action is needed based on the sampling results.

I would like you to get our drinking water program as well as DER's drinking water program involved in assessing the data and formulating an opinion on the risk and action needed. In order to do this I recommend that you review the data and obtain a clear picture as to what we're finding out there, and then convene a meeting of water program personnel and our Superfund removal people

E 009103

DOC #

AR504673

and get their opinions. Please give me a written report and recommendation resulting from this meeting.

5. One citizen at the meeting mentioned that C & D had been recovering or processing silver. Jane stated that there were elevated levels of silver in her drinking water. Did we ever analyze for silver in any of the monitoring or drinking water wells? Do we know for a fact whether silver was processed at C & D?

6. The engineer that Jane hired stated that we had failed to analyze for total dissolved solids, a basic testing procedure.

7. Jane recommended that wipe samples be taken in the homes for lead and that residents be informed of housekeeping procedures that could be initiated to reduce lead levels in homes. I explained that lead contamination in homes could also be attributed to paint and burning of certain fuels. Please check with Bill Steuteville whether sampling in homes is feasible. If so, please talk to AT&T about doing this.

8. Jane recommended that we look at sites in other States where wire was recovered from AT&T Nassau. She mentioned one in South Carolina. Jane suggested that the investigation at these sites was further along and might give us additional information on the pollutants that are associated with wire recovery operations. I feel this recommendation may be worthwhile to pursue.

9. I received numerous complaints that EPA did not listen to residents when they identified problems involving C & D's operation. In addition to the silver recovery referenced above, another resident informed me that we failed to follow up on buried tanks onsite after he attempted to give the location. Another resident told me that there was a battery recovery operation on site that he previously identified to us. Did we follow up on this - Donna didn't say. The residents told me that they felt they had a wealth of information about site operations that EPA was ignoring. Even if we did pursue some of these disclosures, we never provided feed back to the residents concerning our findings. I would like you to conduct some door-to-door interviews with residents either using our public affairs contractor or technical people to get information on site operations. Some type of information bulletin should be prepared, or a follow up meeting conducted to discuss what disclosures were made by citizens and what we did about it. Donna may want to follow up some of these disclosures with someone like Steuteville.

10. Jane asked whether we looked at all the bills of lading associated with this site and whether we had the complete DER file on this site. Donna said nothing so you should confirm that we have this information.

E 009104

AR504674

11. Sharon and Jane complained about the length of time it takes to get sampling results (6 months). They cited at least 2 examples. Donna stated that we had contractor problems in getting the QA/QC work done. Six months is totally unacceptable to me - we should bring this time down to 2-3 months and penalize the contractor involved. If there are future problems in meeting this 2-3 month timeframe for any of your sites, I recommend that you elevate this problem to Pete or me.

12. Sharon complained about not being able to get quality control documentation. Donna told her that it would take 2 years. Sharon stated that if she could get the complete data package instead of the summaries she has been getting from AT&T, and if she could get EPA's data sooner than 6 months, she would not need the QA/QC documentation. AT&T agreed to give her the complete data package in the future.

13. Another resident complained that the construction of the monitoring wells created a dam that resulted in considerable ponding of water on his site. AT&T agreed to fix this. Please make sure that they do.

14. The residents complained that they were given insufficient notice of the public meeting. Hal stated that he provided notice to the newspapers but that they had refused to run the notice. I told Hal that we should have bought space. Jane and Sharon provided Hal with a list of media contacts and told him to advise them if any newspapers refused to print future notices.

As I informed you during our meeting, I want to be more responsive to these citizens. I found their complaints to be valid and reasonable. They were able to document numerous EPA mistakes and communication failures. For the most part, their complaints were not refuted by either Donna or Mike. I would like you to personally become more involved in this operation.

cc: Peter Schaul---
Tom Voltaggio

E 009105

AR504675

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF PENNSYLVANIA

SHARON ROHRBACH, et al.

C.A. NO. 89-1268

v.

AT&T NASSAU METALS
CORP., et al.

JURY TRIAL DEMANDED

AFFIDAVIT OF ANDREW BOCARSLY

Andrew Bocarsly being duly sworn deposes and says:

1. I am an Associate Professor of Chemistry at Princeton University, and have my doctor of philosophy in chemistry. I have expertise in inorganic and physical chemistry having published in these areas over the past 18 years. I have research experience in the chemical interactions of metal selenides with water, and a general knowledge of the chemistry of selenium and arsenic. I also have previously considered the environmental impact of industrial processes involving copper, and its known contaminants: selenium and arsenic.

2. I have read the affidavit of James Perazzo and regard it as representing an unqualified opinion on chemistry. James Perazzo presents no formal qualifications in the area of chemistry, more importantly his account includes several chemical statements which are in error. While James Perazzo may be a qualified geologist, he is not a chemist.

3. Regarding James Perazzo's statements concerning materials sent to the site, and my report (¶ 2-Perazzo affidavit) James Perazzo evidences no awareness of the affidavits or deposition testimony of Ernest Richie or Joseph Butler, both of whom were employees with first hand knowledge of the site. Mr. Perazzo also evidences no knowledge of the deposition of Robert Edgerly, a toxicologist employed by Bell Laboratories, who was familiar with selenium rectifiers and gallium arsenide chips.

4. Mr. Perazzo apparently relies on his data base to eliminate the presence of arsenic and selenium at the site in amounts related to site activities. I have reviewed the reports

EXHIBIT 2

AR504676

and affidavits of Dr. Panitz, Dr. Richenderfer, Mr. Schewe, and Ms. Crumbling. As an expert in inorganic chemistry, based on those reports, I find it unrealistic to contend that selenium and arsenic are only present at background levels in the soil and water.

5. While I understand that many of the sample results showed little or no arsenic or selenium, that in itself is insufficient evidence that arsenic and selenium are not present. It simply demonstrates that these elements were not present in the samples being evaluated. Since these materials are only expected to be present at relatively low levels, and since it is well established that it is analytical difficult to detect both elements (especially selenium), it is not surprising that a large number of samples did not yield positive results.

6. I am familiar with testing methods used for the elements of interest. I concur with the statements of Ms. Crumbling relating to the existing methods for testing for arsenic and selenium under EPA rules, and that they do not represent the best available methodology.

7. Of particular concern is the reporting of "Nondetect" for selenium for samples which were in fact "Undetect-biased low". Mr. Perazzo has accepted all these samples as indicative of the absence of selenium above the background level. In fact, these measurements simply demonstrate that the analytical methodology employed was so insensitive that authentic laboratory samples could not be reliably quantitated. These results are surprising in that either ICP analysis or furnace A.A. should be able to routinely detect down to the 0.5-1ppm level. Using a well tuned machine we have been able to observe both selenium and arsenic (under noninterfering conditions) at the 100ppb level using ICP. Thus, the actual laboratory technique, along with instrument condition etc. is called into question with regard to selenium analysis.

8. Ideally, the selenium analysis should be carried out using mass spectroscopic analysis or neutron activation techniques, this type of instrumentation was apparently not available in the industrial laboratory employed.

9. Mr. Perazzo's criticism of our single point water test which indicated the presence of arsenic in the Rock well (see ¶67-70 of Perazzo affidavit) is inappropriate. The

sample analysis was undertaken to evaluate whether or not the test results previously reported were reliable. Clearly they are not. The study was not meant to provide a statistically acceptable concentration for arsenic (or selenium). As Mr. Perazzo indicates this requires more samples and a standardized procedure. The conclusion to be drawn from my study is that data showing the absence of arsenic in the drinking water supply is highly suspect.

10. It should be further noted that the conditions under which the water sample was obtained, transported, and supplied to me would (if anything) have lead to a lower concentration of arsenic and/or selenium than was present in the Rock well.

11. In arguing that a single data point (the Rock well water sample) is invalid, Mr. Perazzo has conveniently ignored all other data (including the data in the database he has utilized) which indicates the presence of selenium and/or arsenic at environmentally unacceptable levels. Of particular concern are the urine samples Dr. Panitz has obtained showing high concentrations of arsenic and/or selenium in the Rocks, Cenars, Rohrbachs, and Obersts, as well as the vegetable garden samples showing unusually high arsenic concentrations.

12. To verify my results, and Dr. Panitz's data, I have resampled the area, as reported by Dr. Panitz in her October 30, 1992 report, and have recently subjected those samples to analysis. At all times (from the point of water collection to the time of analysis) I have maintained custody over the samples.

13. These samples confirm the presence of extremely elevated levels of selenium in the ground water. The data further shows that unless samples are immediately sealed upon collection and kept cold (40°F) that selenium is volatilized. This may account for the high level of "Nondetects" previously reported.

14. Based on the foregoing, it is obvious that the sampling methodology selected by James Perazzo and his group, while conforming to EPA's standard methodology, are completely inadequate to evaluate the presence of arsenic and selenium at low, but toxic levels.

AR504678

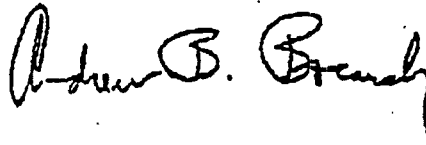
15. I have observed Mr. Perazzo's use of selenium and arsenic levels in coal, but find them to be misdirected, since we are not dealing with coal. There is no evidence that there is any coal which affects the water in the plaintiffs' wells.

16. I have also considered James Perazzo's argument that the low levels of arsenic and selenium in ash (§ 20 and § 42) somehow support that arsenic and selenium have not been derived from site activities. This argument is contrary to chemical fact, in that the arsenic and selenium would be expected to volatilize during the course of the furnace treatment, and therefore, would not be expected to be found in the ash. To the contrary, they would expect to disperse in the air directly from the stack or open burning pit, or to be flushed off the hot metals after burning, and be washed into the leach pit or other waste disposal system. Therefore, being found in the Mill Hopper Pond (arsenic) immediately after the cessation of burning activity is in accordance with my expectations, and also being found in somewhat elevated levels in the leach pit as late as 1992.

17. It would not be likely that selenium and arsenic compounds would continue to be found in the C&D site media at this late date, since, contrary to James Perazzo statement, they would be expected to leach into the ground water at a much faster rate than lead or copper, and, therefore, the proportions as of 1992 would be vastly different than the proportions as of 1985. Mr. Perazzo apparently ignores the fact that cationic metal ions will have a much different transport rate than anionic selenium and arsenic compounds.

18.- I concur with Mr. Perazzo's statements that biological (i.e. plant and microorganisms) interactions of inorganic selenium and arsenic produce organic compounds which are significantly more toxic than many of the inorganic salt forms, and that this represents an exposure pathway in the present case. However, in §25 James Perazzo contradicts his statement in § 8 and 10. In §25, it is claimed that the acidic soil conditions guarantee that the selenium will be in a selenite form, and that this form is inaccessible to plants. In § 10 it is stated "The inorganic forms of selenium such as selenite and selenate as well as organic compounds of selenium can be absorbed by plants." In § 8 it is correctly stated

that interconversion of selenate and selenite is "very slow". Thus, soil pH will have very little effect on the conversion of deposited selenate to selenite over the time period of interest. Therefore any selenate (or SeO_3), the more biologically active form of selenium oxide, produced by the C&D facility would be available for biological interactions.



Andrew B. Bocarsly

Sworn to and subscribed before me this
26th day of February, 1993.

NOTARY PUBLIC

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF PENNSYLVANIA

SHARON ROHRBACH, et al. : C.A. NO. 89-1268
v. : (Judge McClure)
AT&T NASSAU METALS :
CORP., et al. : JURY TRIAL DEMANDED

Ex. B

AFFIDAVIT OF FREDERIC REIDERS

Frederic Raiders being duly sworn, deposes and says:

1. I am a forensic toxicologist, and I have more than thirty years experience and have testified in literally hundreds of cases, relating to drawing inferences for toxicological evaluation from environmental data.

2. I have read the reports of Elaine Panitz, M.D., FACH, FACD, Andrew Bocarsly, Ph.D., George Schewe, MS, and also I have read the affidavit of James Parazzo, MS.

3. In my opinion, the case is absolutely clear that there is off site migration of arsenic and selenium from the C&D site, based on meteorology, the hydrogeology, and an analysis of the samples themselves.

4. As the Director of National Medical Services, ~~XXXX~~ a qualified research laboratory, I am aware of the limitations on arsenic and selenium testing according to EPA protocols. The various laboratories around the country have been aware of this problem, and have been awaiting action by EPA to upgrade its protocols for arsenic and selenium. In short, neither the ICP nor

Ex. B

AR504681

the furnace method is adequate to ^{always} detect levels of arsenic and selenium that are low enough to be hard to find, but are high enough to be ~~toxic~~ potentially toxic. *fr*

5. Because of their converting to organic species, arsenic and selenium are even more susceptible to be present in toxic amounts, but without an ability to locate them according to standard EPA methods.

OMITTED

7. I am familiar with the laboratory work performed by and under the direction of Professor Bocarsly, and regard it as sufficient to create a basis for reasonable analysis that there are elevated levels of arsenic in the water. I have also reviewed Professor Bocarsly's additional testing released on February 20, 1993, which corroborate in full his earlier results.

8. The EPA QAQC protocols are merely a way of ensuring uniformity from one lab to another. By no means did they either ensure the quality of the work that a lab has done, by the same token, equally, do not represent an exclusive method for presenting QAQC. Our lab, like many others, does not use ^{EPA} QAQC requirements except where necessary, because they merely represent one ~~bureaucratic~~ method of presentation. Our quality control is determined by our internal protection and values. *to satisfy clinical requirements & deficiencies. B*

AR504682

9. What if DER uses EPA QAQC presentation does not indicate that DER's laboratory work is not adequate. I am familiar with DER's laboratory work in the environmental ^{field} ~~appeal~~, and consider it highly qualified. Certainly it is as good or better than most commercial laboratories, whatever reporting formats they may utilize.

10. The QAQC contentions are in essence a red herring in any event, because as pointed out by Ms. Crumbling, ~~an~~ arsenic and selenium methodologies ~~dictated~~ ^{of} ~~by~~ EPA are ~~inadequate~~ ^{after}.

11. I have read the report of Ms. Crumbling relating to the quality of the reports produced in the "data base", and concur that most of the selenium and arsenic results that were analyzed are ~~inadequate~~ of limited reliability

12. Based on my review of the Perazzo affidavit, and my review of the reports of Drs. Panitz, Gordon, Berger, and Richenderfer, ~~it is my scientifically reasonable certain & concurred opinion~~ ^{it is my scientifically reasonable certain & concurred opinion} ~~that the plaintiffs are victims of~~ ^{as a forensic toxicologist that the plaintiffs suffer} ~~an expert opinion as a forensic toxicologist that the plaintiffs suffer~~ arsenic and selenium poisoning induced by arsenic and selenium which have emanated from activities at the C&D site.

Fredric Rieders
FREDERIC ~~RIEDERS~~ RIEDERS

Sworn to and subscribed before me
this ____ day of _____, 1993.

NOTARY PUBLIC

er-rhr93/plrs-aff.222

AR504683

Memo from: Deana M. Humbling, Drexel Univ.

page 1

Re: Report #1: Data Package Analyses as of Oct 22, 1991

To: Mr. Robert Sugarman

Date: Oct. 26, 1992

(Report #1: 8 pages total)

References: PADER Laboratory Data Validation Functional Guidelines for
Evaluating Inorganics Analyses - April 24, 1989 (hereafter
referenced as DVG (Data Validation Guidelines))

Raw Data not included

No data validation package with the data

data summary: water from MW-1; MW-2; MW-3; MW-4; MW-5; MW-6; MW-8
samples run both before and after filtering (F)

	MW1....F		MW2....F		MW3....F		MW4....F		MW5....F		MW6....F		MW8....F	
As	3.2	1.8	5.7	9.6	1.9	2.5	7.1	.86U	1.6	.86U	8.2	13	10	5.5
Cr	5U	8U	11	8U	5U	8U	5U	8U	5.4	8U	6.0	8U	24	8U
Pb	4.0	2U	23	2U	26	2U	8.9	2U	4.7	7.6	22	5.8	44	5.3
Se	22UE	2UN	11UE	2UN	11UE	10UN	3	2UN	22U	10UN	22UE	10UN	11UE	2UN
Date	7/29	8/10	7/29	8/10	7/29	8/10	7/27	9/12	7/27	9/12	7/29	8/10	7/29	8/10
analyzed														

Notes: CRDL As = 10 as per SOW 787 (prior to SOW 788 modifications)

Cr = 10

Pb = 5

Se = 5

unfiltered water samples from MW1, 2, 3, 4, 5 & 8 were brown (contained noticeable sediment). samples from MW6 were clear.

A second sample from MW6 /

served as a field duplicate. /

Results of MW6 duplicate.....F /

As 8.3 7.4 /

Cr 6.4 8U /

Pb 15 2U /

Se 22UE 10UN /

Date 7/29 8/10 /

analyzed /

Results of field blank.....F

1.5U 0.86U

6.1 8U

5.0 2.7

2U 2UN

7/27 9/12

Because there was no data package to examine and no independent data validation, the quantitative reasons for the E and N qualifiers are unknown. It is possible that the extent of E (interference) or N (matrix spike recovery [MSS] out of range 75-125%) may justify rejection of the data.

DVG (p. 22): MSS recovery < 75%: data should be qualified as biased low if

any analyte is detected (L).

If MSS recovery $> 30\%$ and $< 74\%$ and no analyte detected, the data should be qualified as biased low (UL).

If MSS recovery $< 30\%$ and no analyte detected, qualify data as unusable (R = reject).

DVG (p. 23) post digestion spike recovery must be between 85 and 115%.

Note on other metals: Hg is always qualified N (except for the 9/12 run). It is unknown whether this would warrant rejection of the data.

No organic contaminants of any significance were detected.

AR504686

Inorganics data for water samples (pre and post filtered) for MW1, 3, 4, 5, 6 & 8. MW2 was not sampled--according to RI report (p. 3-218), MW2 became "non-productive".

A field duplicate sample was taken from MW4.

	(Dupl.)													
	MW1....F		MW3....F		MW4....F		MW4.....F		MW5....F		MW6....F		MW8....F	
As	1.2	.86U	1.7	.86U	3.4	.86U	3.4	.86U	.86U	.86U	15	15	3.0	2.5
Cr	8U	8U	8U	8U	8U	8U	11	8U	8U	8U	10	8U	8U	8U
Pb	14SN	2UN	50SN	19SN	11SN	2UN	12SN	2UN	6.1SN	2UN	4.8N	58N	9.8SN	2.3N
Se	10UN	..*												
Date 10/20 ..*														
analyzed														

* The same entry applies in every column

The data package included an explanation of the N qualifier for Pb and Se:

The matrix sample spike recovery for Pb was 40%. While the DVG allows the use of such data, it is considered to be biased low: non-detects should be qualified as UL (undetected; biased low); detected levels of analyte are qualified as L (biased low). These qualifiers indicate that the results may be higher than reported:

The matrix sample spike recovery for Se was 0%. Since this recovery is less than 30%, any non-detect results for Se are unusable, and should be rejected. Due to matrix or procedure interference, the test method was unable to detect any Se in the sample even when it had been added to the sample in the laboratory prior to analysis.

None of the other analytes were qualified.

AR504687

Sulima water sample (one sample and one duplicate)

Entire raw data package included. Results reported October 13, 1988.

Results

	sample	duplicate
As	1.4	0.86U
Cr	8U	8U
Pb	115	114.8
Se	2U	2U

DATA VALIDATION

Analysis of raw data package indicates that the Pb value is very reliable

MSS recovery = 82.8%

PDS recovery = 89% for original and 101% for 1:5 dilution

As value is reliable

MSS recovery = 92.5%

PDS recovery = 97% for dup 95%

run duplicate = 1.88 & 0.97 = ave of 1.44

field dup run duplicates = 1.12 & 0.59 = ave of 0.85

Se value is reliable

MSS recovery = 83%

PDS recovery = 94% for dup 92%

run duplicate = 2.19 & 0.23 = ave of 1.21

field dup run duplicates = 1.26 & 1.07 = ave of 1.16

shows acceptable replication for measurements below
instrument detection limit (IDL) of 2.0 ppb

Uses SOW 788 (Major revision is that the CRDL for Pb is now 3 ug/L)

Soil samples collected by McLaren/Hart; subjected to TCLP (Toxicity Characteristic Leachate Procedure); the leachate was then analyzed for 8 metals.

Complete raw data package + Chain of Custody record.

Case narrative and data cover 3 samples: F-600; C-800; and Ash. These were collected 7/31/90; and rec'd by the lab 8/1/90.

Chain of Custody records the collection and receipt of a fourth sample, designated D-500, at the same time as the other three. Other than the COC record, there is no mention anywhere of D-500 in the data package nor an explanation of what happened to it.

EPA memo dated Oct. 24, 1990 (document #04564) and status report (doc #001879-001881) mention the missing D-500.

I will focus only on the Pb, As, and Se data.

F-600

Pb 58.6 ppb Result obtained by Method of Standard Additions (MSA) on 1:5 dilution. $r = 1.000$ $[Pb] = 11.71 \times 5 = 58.55$

(There was good agreement with the ICP result: 64)

As 2U Result reliable. MSS recovery = 86.2% (range 75-125%)

PDS recovery = 103.2% (range 85-115%)

analytical duplicates: 1.74 & 2.16 = ave of 1.94

Se 2UN Result unreliable.

MSS recovery = 51.8% DVG p.22: Qualify as UL (biased low).

PDS rec = 69.2% DVG p.24: Qualify as UL if PDS recovery < 85%.

C-800

Pb 69,100 ppb Reported from ICP run (> 5X IDL of 29). Reliable result. Repeat matched; PDS ok

Lab duplicate (C-800 D) = 70,500

MSA done on Furnace run: result reported incorrectly on p. 48368 (wrong dilution factor used, should be X 4000) but since ICP result

As 8.5

was reported, this was not significant.

Reliable result. Furnace result = 5.80 with PDS
rec = 68.6% (acceptable range: 85-115%); result
was corrected to 8.5 based on PDS rec.

Lab duplicate (C-800 D)=6.3 with PDS rec=102.5%

Leachate blanks = 0.5 w/ PDS rec = 105%

Se 2.0 UN

Unreliable. Biased low.

Result = 0.51 w/ PDS rec = 55.8%

C-800 D result = 0.7 w/ PDS rec = 20%

C-800 D repeated w/ serial dilution: result = 0.12
w/ PDS rec = 30%

Leachate blank 1 result = 0.56 w/ PDS rec = 51%

Leachate blank 2 result = 0.21 w/ PDS rec = 85%

ASH

Pb 844,000 ppb

Reliable result. ICP result on X 5 dilution. On Form
I qualified w/ "E"-- Qualified in error due to
calculation error on p. 48264 on serial dilution
(SDI result X 5 X 5 = 907,800 --good match--NOT
SDI result x 5 x 25 = 4,539,000, which led to "E")
Repeat runs: 903,000 & 957,000 on ICP SDI's
Furnace result = 1,050,000 on 1:50,000 dil'n.

F MSA on 1:50,000 dil'n = 872,000 (r = 0.955 --
unacceptable; but irrelevant since ICP reported)

As 10 U

Probably ok. Initial Furnace result = HIGH; but on
1:2 dil'n = 0.01 & 1.16. 1:5 dil'n = 0.49 & 1.66.

PDS rec = 109%

Leachate blank = 0.8 w/ PDS rec = 92%

Se 20 UN

Unreliable.

Initial Furnace - HIGH; 1:2 - HIGH

1:5 dil'n = 0.86 & 0.07 w/ PDS rec = 0%

1:10 dil'n = 0.09 & 0.70 w/ PDS rec = 0%

(Detection limit = 2 X 10 dilution factor = 20)

There were 0% recoveries on other samples in the
run.

Leachate blank = 1.04 w/ PDS rec = 89%

AR504690

Note on these samples:

It is assumed that these samples reflect metals deposited (and able to be extracted in the TCLP) from the incineration of cable. If arsenic and selenium are converted to volatile oxides during incineration, these metals would be carried into the atmosphere. Their absence from ash deposits would not be unexpected.

Note regarding Record of Decision:

On p. 13 (doc p. #334088), Table 4, a 12/90 ash sampled and subjected to TCLP is listed as a result of 458 ppm (458,000 ppb). This is half the Oct. 1990 McLaren/Hart/Compuchem ash TCLP result. Did they resample to get a lower value? Do we have the data package for the 12/90 ash TCLP from which they got the 458 ppm value? Did they include the Oct. 1990 value anywhere in their reports?

End of Oct. 22, 1992 report

Deane M. Ambler

Memo from: Deana M. Crumbling
 Re: Report #2: Data Package Analysis, Century Labs
 To: Mr. Robert Sugarman
 Date: October 30, 1992
 (Report #2: 3 pages total)

page 1

Century Labs, Inc. Thorofare, NJ for Fred Hart Ass., Pennsauken, NJ
 Sample date 4/29/87 Sample delivery date 4/30/87
 Sample report date 6/17/87
 Package report date 6/23/87
 11 soil samples (+ a field duplicate); 2 water samples

Notes: On the Form I's Pb results are listed as done by Furnace AAS.
 However the narrative states the Pbs were done by the ICP, which does
 appear to be the case since there is no Pb furnace data in the package.

Post-Digestion Spikes not done on ICP run (not required, but some labs do).

% TS = % solids (for dry weight calculation)

Result summary--soils--units = mg/kg dry weight = ppm dry weight
 F. Dup

	S-1	S-2	S-3	S-4	S-5	S-5A	S-6	S-7	Bkgd	UPST	DNST
As	5.6	7.2	7.4	5.6	6.4	5.4	22	14	3.2	28S	22S
Cr	15	26	16	17	16	14	23	17	13	17	22
Pb	65100	9630	6680	6960	3870	3530	3170	2420	14	141	1180
Se	0.4U	0.4U	0.5U	0.5U	0.4U	0.5U	0.5U	0.6U	0.5U	0.4U	0.7U
Mn	412	616	577	666	530	577	4540	3630	491	3440	3330
% TS	89	84	77	77	83	83	66	61	85	75	50

All above Se results qualified N - matrix sample spike recovery out of
 range. Only 18% recovery was made on the matrix sample spike
 (using the relatively "clean" background sample; using a more
 representative sample may have given even less recovery). Since
 this recovery is less than 30%; all sample results (all undetects)
 should be rejected as unusable (R). Although superfluous because of
 the matrix sample spike, two of the samples had PDS recovery out of
 range (S-1 and S-5A). These were not repeated.

AR504692

All above Pb samples qualified * (duplicate analysis out of range): Lab duplicate using Bkgd sample (not corr. for % solids): 12 & 7.9 gives 40% Relative Percent Difference. Guidelines require control limit of $\pm 35\%$ for soil for values $> 5X$ CRDL. For $< 5X$ CRDL, soil control limit is $\pm 2X$ CRDL. For Pb, CRDL = 5 ppb. Soil extraction gives X200 dilution factor, so the control limit is $(5 \times 200 \times 2)/1000 = 2$ ppm. As a result, the duplicate result is out of range (4 ppm) and the qualifier would appear justified. However, I take issue with the laboratory using the background sample, with a low Pb level as the lab duplicate sample. With such small levels, even a small variation will put the relative percent difference out of range. This was especially a poor choice since the ICP detection limit is given as 50 ppb on Form VII. This translates to a reading of 0.0500 on the instrument printout. But the printout for the lab duplicate analysis was 0.0416, which is below the instrument detection limit. There are also no controls which go down to that level since the lowest control is the "2X CRDL", but it did not include Pb (or else the ICP instrument was not able to read that level (0.0100) since the printout read 0.0000 for the Pb on the X2 CRDL control. The lowest control for Pb is an "ICS X10"--a 500 ppm level--which gave a reading of 0.4710 (94% recovery). Since the rest of the Pb levels are in the hundred ppm range, one of these samples would have been much more appropriate for a duplicate sample.

The matrix sample spike was also done on the Background sample, which again I feel was inappropriate.

Two As results done by Method of Standard Additions (S). In checking the calculations, I obtained a result of 14 ppm for the Upstream sample, whereas the reported result was 28 ppm. Since a record of calculations was not included in the package, perhaps the sample extract had been diluted X2 for some reason and this accounts for the discrepancy.

Manganese (Mn) was qualified * due to 54% RPD, outside the 35% soil control limit. Manganese results should be considered estimated.

Other elements were qualified: antimony, copper, and zinc. The zinc results are unusable since the matrix sample spike recovery was -54% (yes, MINUS 54%). Antimony results are unusable since the matrix SS rec was 0%. Copper was qualified *, 71% RPD (35% limit). Copper results would be qualified as estimated (J).

Data summary--water samples--units = ug/L = ppb

	UPSTREAM	DOWNSTREAM
As	5.0 U	5.0 U
Cr	11	10 U
Pb F	127	1.0 U
Se	2.0 U	2.0 U
Mn	21	27

The Pb results was qualified * (23% RPD, outside $\pm 20\%$ limits). These Pb results were obtained from ICP, not furnace AAS. While the upstream sample result was above the instrument detection limit of 50 ppb, as noted above, there are no appropriate controls for this range. The downstream sample result for lead is totally inappropriate. The result should read "Lead P 50 U", which is in violation of CRDL of 5 ppb.

There are serious problems with the Se results. There was NO matrix sample spike run. The sample used for other analytes was the Upstream, but it was apparently overlooked in the Se run, at least there is no data for it in the run. On the Form V report, the recovery was initially reported as 70%N, but this was lined through and initialled; but nothing was hand-written in its place. Since the required quality control was not done, the above Se result are unusable on that basis. In addition, the PDS recoveries for the above two samples were out of range (UPST = 70%, DNST = 80%) (limit = 85 to 115%), requiring that they would have been qualified as UL, meaning: "undetected-biased low," had the QC been in place. Obviously, the lack of proper QC was discovered (the lining out by hand), but the Form I's were allowed to go uncorrected, with data appearing to be perfectly acceptable.

Cyanide and silver were also qualified as N. Cyanide MSS was 68% (range 75-125%) and should be qualified UL. Silver had 626% MSS recovery (as reported on Form V), and silver results are unusable.

I seriously question the quality of the work produced by this laboratory.

Steve M. Embury

AR504694